not consider that either functional or anatomical changes in the parenchyma of the organ are responsible for diabetes mellitus.

On the Formation of Uric Acid in Gout, and the Causes of Its Precipitation in the Tissues.—SCHMOLL (*Archiv. gén. de méd.*, 1904, t. ii. p. 2433), after discussing the formation of uric acid from nuclein, reviews the literature to show that neither the theory of retention nor the theory of increased production of uric acid in gout can be held to explain its presence in the serum of patients suffering from gout. The author rejects the theory of Roberts concerning the combination of sodium with the normal quadriurates in the blood, and advances the theory that under normal conditions the uric acid present is combined with thymic acid, the substance obtained when the xanthin bases are split off by oxidation from nucleinic acid. Thymic acid, then, is always present when uric acid is formed by oxidation. This method of formation Schmoll considers to be in operation during health. The combination of these acids cannot yet be detected. In gout, on the other hand, he considers the uric acid to be formed in part by synthetical processes, there being no production of thymic acid by this process. This absence accounts for the precipitable uric acid in the serum, which becomes deposited in the form of tophi. Two series of experiments in support of this hypothesis have been undertaken, the first to determine the influence of thymic acid on the excretion of uric acid, and the second to endeavor to obtain a proof of the synthetic formation of the uric acid in gout. In the first series it was found that administration of thymic acid to gouty patients greatly increased the amount of uric acid in the urine. This, the author considers, was due to the fact that the combination of uric and thymic acids takes place, and in this form the uric acid is much more readily passed into the urine. No such increase took place in normal individuals. The second series of experiments consisted in studying the constituents of the urine of a gouty patient under various diets. None of the changes of diet changed the amount of uric acid excreted in the urine, even though a diet free from nuclein bases was given. This the author considers can be explained only by assuming that uric acid is synthetically produced in the organism.

Experimental Streptococcus Arthritis in Relation to the Etiology of Acute Articular Rheumatism.—Although several English observers have recently done considerable work with the idea of isolating a specific organism pathogenic for rheumatic fever, their work has been done with very few or no control experiments.

R. I. COLE, in the *Journal of Infectious Diseases*, 1904, vol. i. p. 714, comments upon this fact and gives an account of his experiments with various strains of streptococci. The author obtained an organism from the blood of a patient during life, suffering from acute endocarditis which resembled culturally the ordinary streptococcus pyogenes, and which produced an arthritis in rabbits after intravenous injection. As the organism agreed quite closely with the so-called "micrococcus rheumaticus," Cole decided to use as control experiments streptococci isolated from various sources other than from patients with rheumatic fever. Six races of streptococci were used. These were obtained from peritonitis following carcinoma of the stomach; puerperal fever (autopsy);

blood during life in terminal septicæmia following myocarditis; empyema; blood during life in septicæmia following appendicitis; scarlet fever adenitis. The results of intravenous inoculation of these organisms into rabbits did not differ from those obtained in the experiments with the first organism from the case of acute endocarditis, nor did they differ in any marked degree from the experiments of those using the so-called "micrococcus" or "diplococcus" rheumaticus. Lameness was frequently produced, and, at autopsy, arthritis, from which lesions the organism could be regained, were frequently found. In 2 cases acute endocarditis was found at autopsy. One rabbit showed symptoms of inco-ordination similar to those that have been interpreted by other observers as chorea.

Cole concludes from these convincing experiments that arthritis and endocarditis may be produced by the intravenous inoculation of rabbits with streptococci from various sources, and the results obtained are quite similar to those described as resulting from the inoculation of the so-called "micrococcus" or "diplococcus" rheumaticus. He considers the description of a distinct variety or species of streptococci based upon the property of causing endocarditis and arthritis as unwarranted.

The Morphology of the Blood of Splenectomized Animals and of Animals with a Fistula of the Thoracic Duct.—CRESCENZI (*Lo Sperimentale,* 1904, Anno viii. p. 547) has studied the quantitative and qualitative changes in the white blood corpuscles of the dog after splenectomy combined with the formation of a fistulous opening from the thoracic duct. In most of the dogs the flow of lymph ceased after twenty-four hours on account of thrombosis of the duct; one dog lived for five days with patent duct. The appearance of the lymph varied with the periods of digestion, at this time being much more milky than when digestion was not taking place. The lymph contained from 3000 to 7000 white cells per cmm., practically all of which were small lymphocytes. Examination of the blood of normal dogs showed that both the total numbers of red and white cells as well as the relative proportions of white cells varied between rather wide limits. The following numbers show the maximum and minimum limits of variations: red blood corpuscles, 4,940,000 to 8,360,000; white blood cells, 7830 to 16,780; eosinophiles, 5.8 per cent. to 1.4 per cent.; polymorphonuclear 65.5 per cent. to 85.5 per cent.; large mononuclears, 0.2 per cent. to 1.7 per cent.; small mononuclears, 5.8 per cent. to 33.7 per cent.; transitional forms, 2.1 per cent. to 17.5 per cent.

The experiments are divided into four groups.

I. Simple exposure of the thoracic duct in cervical region.

II. Splenectomy followed by fistulous opening into the thoracic duct one to two days later.

III. Simple fistula of thoracic duct with free flow from central end.

IV. Splenectomy and fistula of thoracic duct at same operation.

Immediately after all these operations, including the control experiments, the blood showed an elevation of the polymorphonuclear leukocytes. This change was thought to be dependent upon the effects of the operation *per se.* The small mononuclear lymphocytes dropped in the control experiments within one to two hours after the operation to about one-third of their original number, but rose again within twenty-four hours to a height equal or above that seen before operation.